

## SEQUENCE LISTING

<110> CHUGAI SEIYAKU KABUSHIKI KAISHA

<120> Anti-PCI neutralizing antibodies

<130> 14875-147US1

<150> PCT/JP2004/000429

<151> 2004-01-20

<150> JP 2003-011529

<151> 2003-01-20

<160> 60

<170> PatentIn version 3.1

<210> 1

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificially synthesized sequence

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acgaattcca ccatgcagct cttcctc

27

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<212> DNA

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ctggatcctc aggggcggtt cactttgc

28

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<212> DNA

<213> Artificial Sequence

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26

<210> 4

<211> 1237

<212> DNA

<213> Artificial

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<223> Artificially synthesized sequence encoding human PCI

<220>

<221> CDS

<222> (11)..(1228)

<400> 4

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      Met Gln Leu Phe Leu Leu Leu Cys Leu Val Leu Leu Ser
        1             5             10

cct cag ggg gcc tcc ctt cac cgc cac cac ccc cgg gag atg aag aag      97
Pro Gln Gly Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys
  15             20             25

aga gtc gag gac ctc cat gta ggt gcc acg gtg gcc ccc agc agc aga     145
Arg Val Glu Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg
  30             35             40             45

agg gac ttt acc ttc gac ctc tac agg gtc ttg gct tcc gct gcc ccc     193
Arg Asp Phe Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro
          50             55             60

agc cag aat atc ttc ttc tcc cct gtg agc atc tcc atg agc ctg gcc     241
Ser Gln Asn Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala
          65             70             75

atg ctc tcc ctg ggg gct ggg tcc agc aca aag atg cag atc ctg gag     289
Met Leu Ser Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu
      80             85             90

ggc ctg ggc ctc aac ctc cag aaa agc tca gag gag gag ctg cac aga     337
Gly Leu Gly Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg
      95             100             105

ggc ttt cag cag ctc ctt cag gaa ctc aac cag ccc aga gat ggc ttc     385
Gly Phe Gln Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe
  110             115             120             125

cag ctg agc ctc ggc aat gcc ctt ttc acc gac ctg gtg gta gac ctg     433
Gln Leu Ser Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu
          130             135             140

cag gac acc ttc gta agt gcc atg aag acg ctg tac ctg gca gac act     481
Gln Asp Thr Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr
          145             150             155

ttc ccc acc aac ttt agg gac tct gca ggg gcc atg aag cag atc aat     529
Phe Pro Thr Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn
          160             165             170

gat tat gtg gca aag caa acg aag ggc aag att gtg gac ttg ctt aag     577
Asp Tyr Val Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys
          175             180             185

aac ctc gat agc aat gcg gtc gtg atc atg gtg aat tac atc ttc ttt     625
Asn Leu Asp Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe

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190	195	200	205	
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Lys Ala Lys Trp Glu Thr Ser Phe Asn His Lys Gly Thr Gln Glu Gln	210	215	220	
gac ttc tac gtg acc tcg gag act gtg gtg cgg gta ccc atg atg agc				721
Asp Phe Tyr Val Thr Ser Glu Thr Val Val Arg Val Pro Met Met Ser	225	230	235	
cgc gag gat cag tat cac tac ctc ctg gac cgg aac ctc tcc tgc agg				769
Arg Glu Asp Gln Tyr His Tyr Leu Leu Asp Arg Asn Leu Ser Cys Arg	240	245	250	
gtg gtg ggg gtc ccc tac caa ggc aat gcc acg gct ttg ttc att ctc				817
Val Val Gly Val Pro Tyr Gln Gly Asn Ala Thr Ala Leu Phe Ile Leu	255	260	265	
ccc agt gag gga aag atg cag cag gtg gag aat gga ctg agt gag aaa				865
Pro Ser Glu Gly Lys Met Gln Gln Val Glu Asn Gly Leu Ser Glu Lys	270	275	280	285
acg ctg agg aag tgg ctt aag atg ttc aaa aag agg cag ctc gag ctt				913
Thr Leu Arg Lys Trp Leu Lys Met Phe Lys Lys Arg Gln Leu Glu Leu	290	295	300	
tac ctt ccc aaa ttc tcc att gag ggc tcc tat cag ctg gag aaa gtc				961
Tyr Leu Pro Lys Phe Ser Ile Glu Gly Ser Tyr Gln Leu Glu Lys Val	305	310	315	
ctc ccc agt ctg ggg atc agt aac gtc ttc acc tcc cat gct gat ctg				1009
Leu Pro Ser Leu Gly Ile Ser Asn Val Phe Thr Ser His Ala Asp Leu	320	325	330	
tcc ggc atc agc aac cac tca aat atc cag gtg tct gag atg gtg cac				1057
Ser Gly Ile Ser Asn His Ser Asn Ile Gln Val Ser Glu Met Val His	335	340	345	
aaa gct gtg gtg gag gtg gac gag tgc gga acc aga gca gcg gca gcc				1105
Lys Ala Val Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala Ala	350	355	360	365
acg ggg aca ata ttc act ttc agg tgc gcc cgc ctg aac tct cag agg				1153
Thr Gly Thr Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg	370	375	380	
cta gtg ttc aac agg ccc ttt ctg atg ttc att gtg gat aac aac atc				1201
Leu Val Phe Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile	385	390	395	
ctc ttc ctt ggc aaa gtg aac cgc ccc tgaggatcc				1237
Leu Phe Leu Gly Lys Val Asn Arg Pro	400	405		

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&lt;211&gt; 406

<212> PRT  
 <213> Artificial

<220>  
 <223> Human PCI

<220>  
 <221> sig\_peptide  
 <222> (1)..(19)

<400> 5

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Ala	Ser	Leu	His	Arg	His	His	Pro	Arg	Glu	Met	Lys	Lys	Arg	Val	Glu	20	25	30	
Asp	Leu	His	Val	Gly	Ala	Thr	Val	Ala	Pro	Ser	Ser	Arg	Arg	Asp	Phe	35	40	45	
Thr	Phe	Asp	Leu	Tyr	Arg	Val	Leu	Ala	Ser	Ala	Ala	Pro	Ser	Gln	Asn	50	55	60	
Ile	Phe	Phe	Ser	Pro	Val	Ser	Ile	Ser	Met	Ser	Leu	Ala	Met	Leu	Ser	65	70	75	80
Leu	Gly	Ala	Gly	Ser	Ser	Thr	Lys	Met	Gln	Ile	Leu	Glu	Gly	Leu	Gly	85	90	95	
Leu	Asn	Leu	Gln	Lys	Ser	Ser	Glu	Glu	Glu	Leu	His	Arg	Gly	Phe	Gln	100	105	110	
Gln	Leu	Leu	Gln	Glu	Leu	Asn	Gln	Pro	Arg	Asp	Gly	Phe	Gln	Leu	Ser	115	120	125	
Leu	Gly	Asn	Ala	Leu	Phe	Thr	Asp	Leu	Val	Val	Asp	Leu	Gln	Asp	Thr	130	135	140	
Phe	Val	Ser	Ala	Met	Lys	Thr	Leu	Tyr	Leu	Ala	Asp	Thr	Phe	Pro	Thr	145	150	155	160
Asn	Phe	Arg	Asp	Ser	Ala	Gly	Ala	Met	Lys	Gln	Ile	Asn	Asp	Tyr	Val	165	170	175	
Ala	Lys	Gln	Thr	Lys	Gly	Lys	Ile	Val	Asp	Leu	Leu	Lys	Asn	Leu	Asp	180	185	190	
Ser	Asn	Ala	Val	Val	Ile	Met	Val	Asn	Tyr	Ile	Phe	Phe	Lys	Ala	Lys	195	200	205	
Trp	Glu	Thr	Ser	Phe	Asn	His	Lys	Gly	Thr	Gln	Glu	Gln	Asp	Phe	Tyr	210	215	220	
Val	Thr	Ser	Glu	Thr	Val	Val	Arg	Val	Pro	Met	Met	Ser	Arg	Glu	Asp	225	230	235	240
Gln	Tyr	His	Tyr	Leu	Leu	Asp	Arg	Asn	Leu	Ser	Cys	Arg	Val	Val	Gly				

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<220>
<223> Artificially synthesized DNA encoding human PCI with Flag-tag
<220>
<221> CDS
<222> (11)..(1258)
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            1              5              10

cct cag ggg gcc tcc ctt cac cgc cac cac ccc cgg gag atg aag aag      97
Pro Gln Gly Ala Ser Leu His Arg His His Pro Arg Glu Met Lys Lys
          15              20              25

aga gtc gag gac ctc cat gta ggt gcc acg gtg gcc ccc agc agc aga     145
Arg Val Glu Asp Leu His Val Gly Ala Thr Val Ala Pro Ser Ser Arg
          30              35              40              45

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agg gac ttt acc ttc gac ctc tac agg gtc ttg gct tcc gct gcc ccc	193
Arg Asp Phe Thr Phe Asp Leu Tyr Arg Val Leu Ala Ser Ala Ala Pro	
50 55 60	
agc cag aat atc ttc ttc tcc cct gtg agc atc tcc atg agc ctg gcc	241
Ser Gln Asn Ile Phe Phe Ser Pro Val Ser Ile Ser Met Ser Leu Ala	
65 70 75	
atg ctc tcc ctg ggg gct ggg tcc agc aca aag atg cag atc ctg gag	289
Met Leu Ser Leu Gly Ala Gly Ser Ser Thr Lys Met Gln Ile Leu Glu	
80 85 90	
ggc ctg ggc ctc aac ctc cag aaa agc tca gag gag gag ctg cac aga	337
Gly Leu Gly Leu Asn Leu Gln Lys Ser Ser Glu Glu Glu Leu His Arg	
95 100 105	
ggc ttt cag cag ctc ctt cag gaa ctc aac cag ccc aga gat ggc ttc	385
Gly Phe Gln Gln Leu Leu Gln Glu Leu Asn Gln Pro Arg Asp Gly Phe	
110 115 120 125	
cag ctg agc ctc ggc aat gcc ctt ttc acc gac ctg gtg gta gac ctg	433
Gln Leu Ser Leu Gly Asn Ala Leu Phe Thr Asp Leu Val Val Asp Leu	
130 135 140	
cag gac acc ttc gta agt gcc atg aag acg ctg tac ctg gca gac act	481
Gln Asp Thr Phe Val Ser Ala Met Lys Thr Leu Tyr Leu Ala Asp Thr	
145 150 155	
ttc ccc acc aac ttt agg gac tct gca ggg gcc atg aag cag atc aat	529
Phe Pro Thr Asn Phe Arg Asp Ser Ala Gly Ala Met Lys Gln Ile Asn	
160 165 170	
gat tat gtg gca aag caa acg aag ggc aag att gtg gac ttg ctt aag	577
Asp Tyr Val Ala Lys Gln Thr Lys Gly Lys Ile Val Asp Leu Leu Lys	
175 180 185	
aac ctc gat agc aat gcg gtc gtg atc atg gtg aat tac atc ttc ttt	625
Asn Leu Asp Ser Asn Ala Val Val Ile Met Val Asn Tyr Ile Phe Phe	
190 195 200 205	
aaa gct aag tgg gag aca agc ttc aac cac aaa ggc acc caa gag caa	673
Lys Ala Lys Trp Glu Thr Ser Phe Asn His Lys Gly Thr Gln Glu Gln	
210 215 220	
gac ttc tac gtg acc tcg gag act gtg gtg cgg gta ccc atg atg agc	721
Asp Phe Tyr Val Thr Ser Glu Thr Val Val Arg Val Pro Met Met Ser	
225 230 235	
cgc gag gat cag tat cac tac ctc ctg gac cgg aac ctc tcc tgc agg	769
Arg Glu Asp Gln Tyr His Tyr Leu Leu Asp Arg Asn Leu Ser Cys Arg	
240 245 250	
gtg gtg ggg gtc ccc tac caa ggc aat gcc acg gct ttg ttc att ctc	817
Val Val Gly Val Pro Tyr Gln Gly Asn Ala Thr Ala Leu Phe Ile Leu	
255 260 265	

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ccc agt gag gga aag atg cag cag gtg gag aat gga ctg agt gag aaa 865
Pro Ser Glu Gly Lys Met Gln Gln Val Glu Asn Gly Leu Ser Glu Lys
270                275                280                285

acg ctg agg aag tgg ctt aag atg ttc aaa aag agg cag ctc gag ctt 913
Thr Leu Arg Lys Trp Leu Lys Met Phe Lys Lys Arg Gln Leu Glu Leu
                290                295                300

tac ctt ccc aaa ttc tcc att gag ggc tcc tat cag ctg gag aaa gtc 961
Tyr Leu Pro Lys Phe Ser Ile Glu Gly Ser Tyr Gln Leu Glu Lys Val
                305                310                315

ctc ccc agt ctg ggg atc agt aac gtc ttc acc tcc cat gct gat ctg 1009
Leu Pro Ser Leu Gly Ile Ser Asn Val Phe Thr Ser His Ala Asp Leu
                320                325                330

tcc ggc atc agc aac cac tca aat atc cag gtg tct gag atg gtg cac 1057
Ser Gly Ile Ser Asn His Ser Asn Ile Gln Val Ser Glu Met Val His
                335                340                345

aaa gct gtg gtg gag gtg gac gag tcg gga acc aga gca gcg gca gcc 1105
Lys Ala Val Val Glu Val Asp Glu Ser Gly Thr Arg Ala Ala Ala Ala
350                355                360                365

acg ggg aca ata ttc act ttc agg tcg gcc cgc ctg aac tct cag agg 1153
Thr Gly Thr Ile Phe Thr Phe Arg Ser Ala Arg Leu Asn Ser Gln Arg
                370                375                380

cta gtg ttc aac agg ccc ttt ctg atg ttc att gtg gat aac aac atc 1201
Leu Val Phe Asn Arg Pro Phe Leu Met Phe Ile Val Asp Asn Asn Ile
                385                390                395

ctc ttc ctt ggc aaa gtg aac cgc ccc gga tcc gac tac aag gac gac 1249
Leu Phe Leu Gly Lys Val Asn Arg Pro Gly Ser Asp Tyr Lys Asp Asp
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gat gac aag tga
Asp Asp Lys
415

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<210> 7
<211> 416
<212> PRT
<213> Artificial

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<220>
<223> Human PCI with Flag-tag

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<220>
<221> sig_peptide
<222> (1)..(19)

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 1                5                10                15

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Asp	Leu	His	Val	Gly	Ala	Thr	Val	Ala	Pro	Ser	Ser	Arg	Arg	Asp	Phe	35	40	45	
Thr	Phe	Asp	Leu	Tyr	Arg	Val	Leu	Ala	Ser	Ala	Ala	Pro	Ser	Gln	Asn	50	55	60	
Ile	Phe	Phe	Ser	Pro	Val	Ser	Ile	Ser	Met	Ser	Leu	Ala	Met	Leu	Ser	65	70	75	80
Leu	Gly	Ala	Gly	Ser	Ser	Thr	Lys	Met	Gln	Ile	Leu	Glu	Gly	Leu	Gly	85	90	95	
Leu	Asn	Leu	Gln	Lys	Ser	Ser	Glu	Glu	Glu	Leu	His	Arg	Gly	Phe	Gln	100	105	110	
Gln	Leu	Leu	Gln	Glu	Leu	Asn	Gln	Pro	Arg	Asp	Gly	Phe	Gln	Leu	Ser	115	120	125	
Leu	Gly	Asn	Ala	Leu	Phe	Thr	Asp	Leu	Val	Val	Asp	Leu	Gln	Asp	Thr	130	135	140	
Phe	Val	Ser	Ala	Met	Lys	Thr	Leu	Tyr	Leu	Ala	Asp	Thr	Phe	Pro	Thr	145	150	155	160
Asn	Phe	Arg	Asp	Ser	Ala	Gly	Ala	Met	Lys	Gln	Ile	Asn	Asp	Tyr	Val	165	170	175	
Ala	Lys	Gln	Thr	Lys	Gly	Lys	Ile	Val	Asp	Leu	Leu	Lys	Asn	Leu	Asp	180	185	190	
Ser	Asn	Ala	Val	Val	Ile	Met	Val	Asn	Tyr	Ile	Phe	Phe	Lys	Ala	Lys	195	200	205	
Trp	Glu	Thr	Ser	Phe	Asn	His	Lys	Gly	Thr	Gln	Glu	Gln	Asp	Phe	Tyr	210	215	220	
Val	Thr	Ser	Glu	Thr	Val	Val	Arg	Val	Pro	Met	Met	Ser	Arg	Glu	Asp	225	230	235	240
Gln	Tyr	His	Tyr	Leu	Leu	Asp	Arg	Asn	Leu	Ser	Cys	Arg	Val	Val	Gly	245	250	255	
Val	Pro	Tyr	Gln	Gly	Asn	Ala	Thr	Ala	Leu	Phe	Ile	Leu	Pro	Ser	Glu	260	265	270	
Gly	Lys	Met	Gln	Gln	Val	Glu	Asn	Gly	Leu	Ser	Glu	Lys	Thr	Leu	Arg	275	280	285	
Lys	Trp	Leu	Lys	Met	Phe	Lys	Lys	Arg	Gln	Leu	Glu	Leu	Tyr	Leu	Pro	290	295	300	
Lys	Phe	Ser	Ile	Glu	Gly	Ser	Tyr	Gln	Leu	Glu	Lys	Val	Leu	Pro	Ser	305	310	315	320



Leu	Gly	Ile	Ser	Asn	Val	Phe	Thr	Ser	His	Ala	Asp	Leu	Ser	Gly	Ile
				325					330					335	
Ser	Asn	His	Ser	Asn	Ile	Gln	Val	Ser	Glu	Met	Val	His	Lys	Ala	Val
			340					345					350		
Val	Glu	Val	Asp	Glu	Ser	Gly	Thr	Arg	Ala	Ala	Ala	Ala	Thr	Gly	Thr
		355					360					365			
Ile	Phe	Thr	Phe	Arg	Ser	Ala	Arg	Leu	Asn	Ser	Gln	Arg	Leu	Val	Phe
	370					375					380				
Asn	Arg	Pro	Phe	Leu	Met	Phe	Ile	Val	Asp	Asn	Asn	Ile	Leu	Phe	Leu
385					390					395					400
Gly	Lys	Val	Asn	Arg	Pro	Gly	Ser	Asp	Tyr	Lys	Asp	Asp	Asp	Asp	Lys
				405					410					415	

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<210>      8
<211>     119
<212>      PRT
<213>      Mus musculus
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Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
  1                      5                      10                      15
Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asp Ile Lys Asp Thr
                      20                      25                      30
Phe Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
                      35                      40                      45
Gly Arg Ile Asp Tyr Val Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe
                      50                      55                      60
Gln Gly Lys Ala Thr Ile Thr Gly Asp Thr Ser Ser Asn Thr Ala Tyr
  65                      70                      75                      80
Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
                      85                      90                      95
Ala Arg Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr Trp Gly Gln Gly
                      100                      105                      110
Thr Leu Val Thr Val Ser Ala
                      115

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<210> 9
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<212> PRT
<213> Mus musculus
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Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asp Ile Lys Asp Thr	20	25	30
Phe Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile	35	40	45
Gly Arg Ile Asp Tyr Val Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe	50	55	60
Gln Gly Lys Ala Thr Ile Thr Gly Asp Thr Ser Ser Asn Thr Ala Tyr	65	70	75
Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys	85	90	95
Ala Arg Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr Trp Gly Gln Gly	100	105	110
Thr Leu Val Thr Val Ser Ala	115		

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35 40 45
Gly Arg Ile Asp Leu Val Asn Val Asn Thr Lys Tyr Asp Pro Asn Phe
50 55 60
Gln Asp Arg Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
65 70 75 80
Leu Gln Leu Thr Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
85 90 95
Ala Arg Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr Trp Gly Gln Gly
100 105 110
Thr Leu Val Thr Val Ser Ala
115

<210> 11  
 <211> 119

<212> PRT  
 <213> Mus musculus

<400> 11

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Arg Pro Gly Ala  
 1 5 10 15  
 Leu Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Tyr  
 20 25 30  
 Tyr Ile His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Arg Ile Asp Leu Glu Lys Gly Asn Ile Ile Tyr Asp Pro Lys Phe  
 50 55 60  
 Gln Gly Lys Asp Asn Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr  
 65 70 75 80  
 Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95  
 Ala Arg Gly Gly Tyr Asp Val Pro Ser Phe Ala Tyr Trp Gly Gln Gly  
 100 105 110  
 Thr Leu Val Thr Val Ser Ala  
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 <212> PRT  
 <213> Mus musculus

<400> 12

Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
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 Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Asp Phe Ser Arg Tyr  
 20 25 30  
 Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45  
 Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn Tyr Thr Pro Ser Leu  
 50 55 60  
 Lys Asp Lys Phe Ile Ile Ser Arg Asp Asn Ala Lys Lys Thr Leu Tyr  
 65 70 75 80  
 Leu Gln Met Asn Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys  
 85 90 95  
 Ala Arg Phe Phe Tyr Tyr Gly Thr Pro Asp Tyr Trp Gly Gln Gly Thr  
 100 105 110  
 Thr Leu Thr Val Ser Ser Ala

115

<210> 13  
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 <212> PRT  
 <213> Mus musculus

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 Glu Val Lys Leu Leu Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
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 Ser Leu Lys Phe Ser Cys Glu Ala Ser Gly Phe Asp Phe Ser Arg Tyr  
           20                  25                  30  
 Trp Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Ile  
           35                  40                  45  
 Gly Glu Ile Asn Pro Asp Ser Ser Thr Ile Thr Tyr Thr Ser Ser Leu  
   50                  55                  60  
 Lys Asp Arg Phe Ile Ile Ser Arg Asp Asn Ala Lys Asn Thr Val Tyr  
   65                  70                  75                  80  
 Leu Gln Met Ser Lys Val Arg Ser Glu Asp Thr Ala Leu Tyr Tyr Cys  
                   85                  90                  95  
 Ala Arg Leu Phe Tyr Tyr Gly Thr Pro Asp Tyr Trp Gly Gln Gly Thr  
           100                  105                  110  
 Thr Leu Thr Val Ser Ser Ala  
       115

<210> 14  
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 <212> PRT  
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<400> 14  
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 Ser Val Lys Met Ser Cys Lys Ala Phe Gly Tyr Thr Phe Thr Thr Tyr  
           20                  25                  30  
 Pro Ile Glu Trp Met Lys Gln Asn His Gly Lys Ser Leu Glu Trp Ile  
   35                  40                  45  
 Gly Lys Phe His Pro Asp Asn Asp Asp Thr Asn Tyr Asn Glu Lys Phe  
   50                  55                  60  
 Lys Gly Lys Ala Lys Leu Thr Val Glu Lys Ser Ser Ser Thr Val Tyr  
   65                  70                  75                  80  
 Leu Glu Leu Ser Arg Leu Thr Ser Asp Asp Ser Ala Val Tyr Tyr Cys  
           85                  90                  95

Ala Arg Gly His Asp Tyr Asp Tyr Gly Met Asp Tyr Trp Gly Gln Gly  
                   100                  105                  110

Thr Ser Val Thr Val Ser Ser Ala  
           115                  120

<210> 15  
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 <212> PRT  
 <213> Mus musculus

<400> 15  
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Glu Lys Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Leu Ile Tyr Met  
                   20                  25                  30

His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Glu Leu Trp Ile Tyr  
           35                  40                  45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser  
           50                  55                  60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu  
   65                  70                  75                  80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr  
                   85                  90                  95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
           100                  105

<210> 16  
 <211> 106  
 <212> PRT  
 <213> Mus musculus

<400> 16  
 Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly  
   1                  5                  10                  15

Glu Lys Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Leu Ile Tyr Met  
                   20                  25                  30

His Trp Phe Gln Gln Lys Pro Gly Ser Ser Pro Glu Leu Trp Ile Tyr  
           35                  40                  45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser  
           50                  55                  60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu  
   65                  70                  75                  80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr  
                             85                            90                            95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
                     100                            105

<210> 17  
 <211> 106  
 <212> PRT  
 <213> Mus musculus

<400> 17  
 Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly  
   1                    5                            10                            15

Glu Lys Val Thr Ile Thr Cys Ser Ala Thr Ser Ser Leu Ile Tyr Met  
                     20                            25                            30

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr  
                     35                            40                            45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser  
             50                            55                            60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu  
   65                            70                            75                            80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr  
                             85                            90                            95

Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
                     100                            105

<210> 18  
 <211> 106  
 <212> PRT  
 <213> Mus musculus

<400> 18  
 Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly  
   1                    5                            10                            15

Glu Lys Val Thr Ile Thr Cys Ser Ala Ser Ser Ser Val Ser Tyr Met  
                     20                            25                            30

His Trp Phe Gln Gln Lys Pro Gly Thr Ser Pro Lys Leu Trp Ile Tyr  
                     35                            40                            45

Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser Gly Ser  
             50                            55                            60

Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Arg Met Glu Ala Glu  
   65                            70                            75                            80

Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Arg Ser Ser Tyr Pro Phe Thr

	85		90		95
Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys					
	100		105		
<210>	19				
<211>	108				
<212>	PRT				
<213>	Mus musculus				
<400>	19				
Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Ala Ser Val Gly					
1	5		10		15
Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ile Val Ala					
	20		25		30
Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Glu Leu Leu Ile					
	35		40		45
Tyr Ser Ala Ser Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly					
	50		55		60
Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala					
	65		70		75
Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln His Tyr Ser Ser Pro Pro					
	85		90		95
Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys					
	100		105		
<210>	20				
<211>	108				
<212>	PRT				
<213>	Mus musculus				
<400>	20				
Asp Ile Val Met Thr Gln Ser His Lys Phe Met Ser Thr Ser Val Gly					
1	5		10		15
Asp Arg Val Ser Ile Thr Cys Lys Ala Ser Gln Asp Val Ile Lys Ala					
	20		25		30
Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile					
	35		40		45
Tyr Ser Thr Ser Tyr Arg Tyr Thr Gly Val Pro Asp Arg Phe Ser Gly					
	50		55		60
Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val Gln Ala					
	65		70		75
Glu Asp Leu Ala Val Tyr Tyr Cys Gln Gln His Tyr Ser Ser Pro Pro					
	85		90		95

Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
                   100                  105

<210> 21  
 <211> 111  
 <212> PRT  
 <213> Mus musculus

<400> 21  
 Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly  
   1                  5                  10                  15  
 Gln Arg Ala Thr Ile Ser Cys Lys Ala Ser Gln Ser Val Asp Tyr Asp  
                   20                  25                  30  
 Gly Asp Ser Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
                   35                  40                  45  
 Lys Leu Leu Ile Tyr Gly Ala Ser Asn Leu Glu Ser Gly Thr Pro Ala  
   50                  55                  60  
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Asp Ile His  
   65                  70                  75                  80  
 Pro Val Glu Glu Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Ser Asn  
                   85                  90                  95  
 Glu Asp Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Thr  
                   100                  105                  110

<210> 22  
 <211> 5  
 <212> PRT  
 <213> Mus musculus

<400> 22  
 Asp Thr Phe Met His  
   1                  5

<210> 23  
 <211> 5  
 <212> PRT  
 <213> Mus musculus

<400> 23  
 Asp Tyr Tyr Ile His  
   1                  5

<210> 24  
 <211> 5  
 <212> PRT  
 <213> Mus musculus



<400> 24  
 Arg Tyr Trp Met Ser  
     1                    5

<210> 25  
 <211> 5  
 <212> PRT  
 <213> Mus musculus

<400> 25  
 Thr Tyr Pro Ile Glu  
     1                    5

<210> 26  
 <211> 17  
 <212> PRT  
 <213> Mus musculus

<400> 26  
 Arg Ile Asp Tyr Val Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe Gln  
     1                    5                    10                    15

Gly

<210> 27  
 <211> 17  
 <212> PRT  
 <213> Mus musculus

<400> 27  
 Arg Ile Asp Leu Val Asn Val Asn Thr Lys Tyr Asp Pro Asn Phe Gln  
     1                    5                    10                    15

Asp

<210> 28  
 <211> 17  
 <212> PRT  
 <213> Mus musculus

<400> 28  
 Arg Ile Asp Leu Glu Lys Gly Asn Ile Ile Tyr Asp Pro Lys Phe Gln  
     1                    5                    10                    15

Gly

<210> 29  
 <211> 17

<212> PRT  
 <213> Mus musculus

<400> 29  
 Glu Ile Asn Pro Asp Ser Ser Thr Ile Asn Tyr Thr Pro Ser Leu Lys  
     1                    5                    10                    15

Asp

<210> 30  
 <211> 17  
 <212> PRT  
 <213> Mus musculus

<400> 30  
 Glu Ile Asn Pro Asp Ser Ser Thr Ile Thr Tyr Thr Ser Ser Leu Lys  
     1                    5                    10                    15

Asp

<210> 31  
 <211> 17  
 <212> PRT  
 <213> Mus musculus

<400> 31  
 Lys Phe His Pro Asp Asn Asp Asp Thr Asn Tyr Asn Glu Lys Phe Lys  
     1                    5                    10                    15

Gly

<210> 32  
 <211> 10  
 <212> PRT  
 <213> Mus musculus

<400> 32  
 Gly Gly Tyr Asp Val Arg Glu Phe Ala Tyr  
     1                    5                    10

<210> 33  
 <211> 10  
 <212> PRT  
 <213> Mus musculus

<400> 33  
 Gly Gly Tyr Asp Val Pro Ser Phe Ala Tyr  
     1                    5                    10

<210> 34  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 34  
 Phe Phe Tyr Tyr Gly Thr Pro Asp Tyr  
 1 5

<210> 35  
 <211> 9  
 <212> PRT  
 <213> Mus musculus

<400> 35  
 Leu Phe Tyr Tyr Gly Thr Pro Asp Tyr  
 1 5

<210> 36  
 <211> 10  
 <212> PRT  
 <213> Mus musculus

<400> 36  
 Gly His Asp Tyr Asp Tyr Gly Met Asp Tyr  
 1 5 10

<210> 37  
 <211> 10  
 <212> PRT  
 <213> Mus musculus

<400> 37  
 Ser Ala Thr Ser Ser Leu Ile Tyr Met His  
 1 5 10

<210> 38  
 <211> 10  
 <212> PRT  
 <213> Mus musculus

<400> 38  
 Ser Ala Ser Ser Ser Val Ser Tyr Met His  
 1 5 10

<210> 39  
 <211> 11  
 <212> PRT  
 <213> Mus musculus

<400> 39  
 Lys Ala Ser Gln Asp Val Ile Val Ala Val Ala

1

5

10

<210> 40  
 <211> 11  
 <212> PRT  
 <213> Mus musculus

<400> 40  
 Lys Ala Ser Gln Asp Val Ile Lys Ala Val Ala  
       1                  5                  10

<210> 41  
 <211> 15  
 <212> PRT  
 <213> Mus musculus

<400> 41  
 Lys Ala Ser Gln Ser Val Asp Tyr Asp Gly Asp Ser Tyr Leu Asn  
       1                  5                  10                  15

<210> 42  
 <211> 11  
 <212> PRT  
 <213> Mus musculus

<400> 42  
 Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala  
       1                  5                  10

<210> 43  
 <211> 11  
 <212> PRT  
 <213> Mus musculus

<400> 43  
 Ser Ala Ser Tyr Arg Tyr Thr Gly Val Pro Asp  
       1                  5                  10

<210> 44  
 <211> 11  
 <212> PRT  
 <213> Mus musculus

<400> 44  
 Ser Thr Ser Tyr Arg Tyr Thr Gly Val Pro Asp  
       1                  5                  10

<210> 45  
 <211> 11  
 <212> PRT  
 <213> Mus musculus

<400> 45  
 Gly Ala Ser Asn Leu Glu Ser Gly Thr Pro Ala  
       1                      5                      10

<210> 46  
 <211> 7  
 <212> PRT  
 <213> Mus musculus

<400> 46  
 Arg Ser Ser Tyr Pro Phe Thr  
       1                      5

<210> 47  
 <211> 8  
 <212> PRT  
 <213> Mus musculus

<400> 47  
 His Tyr Ser Ser Pro Pro Trp Thr  
       1                      5

<210> 48  
 <211> 7  
 <212> PRT  
 <213> Mus musculus

<400> 48  
 Ser Asn Glu Asp Pro Pro Thr  
       1                      5

<210> 49  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Heavy chain CDR1

<220>  
 <221> misc\_feature  
 <222> (2)..(2)  
 <223> "Xaa" in position 2 represents "Thr" or "Tyr"

<220>  
 <221> misc\_feature  
 <222> (3)..(3)  
 <223> "Xaa" in position 3 represents "Phe" or "Tyr"

<220>  
 <221> misc\_feature  
 <222> (4)..(4)

<223> "Xaa" in position 4 represents "Met" or "Ile"

<400> 49

Asp Xaa Xaa Xaa His  
1 5

<210> 50

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Heavy chain CDR2

<220>

<221> misc\_feature

<222> (4)..(4)

<223> "Xaa" in position 4 represents "Tyr" or "Leu"

<220>

<221> misc\_feature

<222> (5)..(5)

<223> "Xaa" in position 5 represents "Val" or "Glu"

<220>

<221> misc\_feature

<222> (6)..(6)

<223> "Xaa" in position 6 represents "Asn" or "Lys"

<220>

<221> misc\_feature

<222> (7)..(7)

<223> "Xaa" in position 7 represents "Gly" or "Val"

<220>

<221> misc\_feature

<222> (9)..(9)

<223> "Xaa" in position 9 represents "Thr" or "Ile"

<220>

<221> misc\_feature

<222> (10)..(10)

<223> "Xaa" in position 10 represents "Lys" or "Ile"

<220>

<221> misc\_feature

<222> (14)..(14)

<223> "Xaa" in position 14 represents "Lys" or "Asn"

<220>

<221> misc\_feature

<222> (17)..(17)

<223> "Xaa" in position 17 represents "Gly" or "Asp"

<400> 50

Arg Ile Asp Xaa Xaa Xaa Xaa Asn Xaa Xaa Tyr Asp Pro Xaa Phe Gln



<222> (13)..(13)  
 <223> "Xaa" in position 13 represents "Pro" or "Ser"

<400> 53  
 Glu Ile Asn Pro Asp Ser Ser Thr Ile Xaa Tyr Thr Xaa Ser Leu Lys  
       1                  5                  10                  15

Asp

<210> 54  
 <211> 9  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Heavy chain CDR3

<220>  
 <221> misc\_feature  
 <222> (1)..(1)  
 <223> "Xaa" in position 1 represents "Phe" or "Leu"

<400> 54  
 Xaa Phe Tyr Tyr Gly Thr Pro Asp Tyr  
       1                  5

<210> 55  
 <211> 10  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Light chain CDR1

<220>  
 <221> misc\_feature  
 <222> (3)..(3)  
 <223> "Xaa" in position 3 represents "Thr" or "Ser"

<220>  
 <221> misc\_feature  
 <222> (6)..(6)  
 <223> "Xaa" in position 6 represents "Leu" or "Val"

<220>  
 <221> misc\_feature  
 <222> (7)..(7)  
 <223> "Xaa" in position 7 represents "Ile" or "Ser"

<400> 55  
 Ser Ala Xaa Ser Ser Xaa Xaa Tyr Met His  
       1                  5                  10



<210> 56  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Light chain CDR2

<400> 56  
 Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala  
       1                  5                  10

<210> 57  
 <211> 7  
 <212> PRT  
 <213> Artificial

<220>  
 <223> Light chain CDR3

<400> 57  
 Arg Ser Ser Tyr Pro Phe Thr  
       1                  5

<210> 58  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Light chain CDR1

<220>  
 <221> misc\_feature  
 <222> (8)..(8)  
 <223> "Xaa" in position 8 represents "Val" or "Lys"

<400> 58  
 Lys Ala Ser Gln Asp Val Ile Xaa Ala Val Ala  
       1                  5                  10

<210> 59  
 <211> 11  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Light chain CDR2

<220>  
 <221> misc\_feature  
 <222> (2)..(2)  
 <223> "Xaa" in position 2 represents "Ala" or "Thr"

<400> 59  
Ser Xaa Ser Tyr Arg Tyr Thr Gly Val Pro Asp  
1 5 10

<210> 60  
<211> 8  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Light chain CDR3

<400> 60  
His Tyr Ser Ser Pro Pro Trp Thr  
1 5